



Atty. Dkt. No. 040447-0252

***IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES***

Applicant: Naoki HASHIMOTO et al.  
Title: PACKET TRANSMISSION SYSTEM AND PACKET  
RECEPTION SYSTEM  
Appl. No.: 10/671,905  
Filing Date: 9/29/2003  
Examiner: David R. Lazaro  
Art Unit: 2155  
Confirmation Number: 1546

**BRIEF ON APPEAL**

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Sir:

Under the provisions of 37 C.F.R. § 41.37, this Appeal Brief is being filed together with a credit card payment form in the amount of \$540.00 covering the 37 C.F.R. 41.20(b)(2) appeal fee. If this fee is deemed to be insufficient, authorization is hereby given to charge any deficiency (or credit any balance) to the undersigned deposit account 19-0741.

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**1. REAL PARTY IN INTEREST**

The real party in interest is NEC Infrontia Corporation, the assignee of record, having a place of business at 2-6-1, Kitamikata, Takatsu-ku, Kawasaki-shi, Kanagawa, Japan. An assignment from the inventors, Naoki Hashimoto and Yoshikazu Kobayashi, was recorded in the records of the United States Patent and Trademark Office at Reel/Frame 014552/0326 on September 29 , 2003.

**2. RELATED APPEALS AND INTERFERENCES**

There are no related appeals of interferences that will directly affect, be directly affected by, or have a bearing on the present appeal, that are known to Appellants or Appellants' patent representative.

### **3. STATUS OF CLAIMS**

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,089,304 (Graham) in view of U.S. Patent 6,687,247 (Wilford) and U.S. Patent 6,118,771 (Tajika). Claims 2-3 and 5-11 depend from claim 1, and are rejected under 35 U.S.C. 103(a) as being unpatentable over the above combination or over the above combination in further view of one or more of U.S. Patent 6,032,197 (Birdwell), U.S. Patent 6,112,323 (Meizlik), U.S. Patent 6,188,691 (Barkai), and U.S. Patent 6,577,609 (Sharony).

Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,574,770 (Daudelin). Claims 13-14 and 16-23 depend from claim 12 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Daudelin in further view of one or more of U.S. Patent 6,687,247 (Wilford), U.S. Patent 6,032,197 (Birdwell), U.S. Patent 5,793,976 (Chen), U.S. Patent 6,188,691 (Barkai), U.S. Patent 6,646,987 (Qaddoura), and U.S. Patent 6,577,609 (Sharony).

The rejection of claims 1-3, 5-14 and 16-23 are being appealed. Claims 4 and 15 were cancelled.

Claims 1-23 in their current condition with the appropriate status reference are attached hereto in the Claim Appendix.

#### **4. STATUS OF AMENDMENTS**

A Final Office Action dated November 26, 2008 was received by Appellants. In an after final response filed on January 26, 2009, claim 12 was amended to replace the term “capable of receiving” with “for receiving”, and claims 4 and 15 were cancelled. No other amendments have been made after the Final Office Action. No amendments have been made in the present Application subsequent to the response filed on January 26, 2009.

An Advisory Action was issued by the Examiner on February 11, 2009. In the Advisory Action, the Examiner indicated that the claim amendments were entered.

Appeal of claims 1-3, 5-14 and 16-23 is appropriate because all of the claims have been twice rejected. See 35 U.S.C. § 134(a).

A Notice of Appeal with a Pre-Appeal Brief was filed with the U.S. Patent and Trademark Office on February 26, 2009 . A Notice of Panel Decision from Pre-Appeal Brief Review was mailed May 15, 2009, in which the rejections of claims were maintained.

As such, it is submitted that Claims 1-3, 5-14 and 16-23 are now pending in this application and are the subject of this appeal.

## **5. SUMMARY OF CLAIMED SUBJECT MATTER**

Independent Claim 1: The present invention, as described in independent claim 1 of the present application, is directed to a packet transmission system (see, e.g., Abstract) comprising sorting means for sorting a packet according to whether the packet should be transmitted in a unicast form or in a simultaneous packet form by multicast or broadcast (see, e.g., Page 10, Lines 3-19); packet identification information addition means for adding packet identification information to the packet if the packet is sorted as a packet to be transmitted in the simultaneous packet form by the sorting means (see, e.g., Page 3, Lines 5-11); and transmission means for transmitting said packet that is allocated said packet identification information a plurality of times even if the packet transmission system does not receive a retransmission request from a reception side (see, e.g., Page 3, Lines 11), wherein said transmission means transmits said packet that is allocated said packet identification information and a redundant packet which is a duplicate of said packet that is allocated said packet identification information (see, e.g., Page 3, Lines 19-22), and wherein said packet and said redundant packet transmitted with the same packet identification information contains an identical sequence number (see, e.g., Page 11, Lines 5-17).

Independent Claim 12: The present invention, as described in independent claim 12 of the present application, is directed to a packet transmission system (see, e.g., Abstract) comprising reception means for receiving duplicate packets that are allocated packet identification information once or a plurality of times without a retransmission request (see, e.g., the paragraph starting from Page 4, Lines 24); sorting means for sorting the received packets according to whether each of the received packets is a simultaneous packet or a unicast packet, and, if the received packet is a simultaneous packet, further sorting the

received packet according to whether the simultaneous packet is allocated packet identification information (see, e.g., Figure 3 and the paragraph starting from Page 12, Line 9); determination means for determining, if the received packet is sorted as a simultaneous packet allocated packet identification information by the sorting means, whether the received packet is a duplicate of a simultaneous packet that is previously received by the reception means (see, e.g., the paragraph starting from Page 11, Line 5); and discard means for discarding the received packet if a determination result of said determination means is positive (see, e.g., the paragraph starting from Page 11, Line 5 and the paragraph starting from Page 12, Line 9), wherein each of said duplicate packets includes a plurality of higher level packets positive (see, e.g., the paragraph starting from Page 5, Line 13).

**6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The first ground of rejection to be reviewed on appeal is the Examiner's rejection of Claims 1-3 and 5-11 under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Wilford and Tajika, or as being unpatentable over the combination of Graham, Wilford and Tajika in further view of one or more of Birdwell, Meizlik, Barkai, and Sharony.

The second ground of rejection to be reviewed on appeal is the Examiner's rejection of Claim 12 under 35 U.S.C. 102(e) as being anticipated by Daudelin.

The third ground of rejection to be reviewed on appeal is the Examiner's rejection of Claims 13-14 and 16-23 under 35 U.S.C. 103(a) as being unpatentable over Daudelin in further view of one or more of Wilford, Birdwell, Chen, Barkai, Qaddoura and Sharony.



## **7. ARGUMENT**

### **(I) Rejection of claims 1-3 and 5-11 under 35 U. S. C. § 103(a)**

Appellant respectfully requests that the rejection of claims 1-3 and 5-11 under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Wilford and Tajika, and the rejection in further view of one or more of Birdwell, Meizlik, Barkai, and Sharony be reversed and withdrawn for at least the reasons set forth below.

#### **A. Legal Standard**

Appellant recognizes that the recent *KSR* case has liberalized the grounds for rejecting a claim as obvious. However, there are still limitations on those recently liberalized grounds. For example, Appellant points to MPEP § 2143.01, IV, entitled the *Mere Statement That The Claimed Invention Is Within The Capabilities Of One Of Ordinary Skill In The Art Is Not Sufficient By Itself To Establish Prima Facie Obviousness*, which states that

statement that modifications of the prior art to meet the claimed invention would have been “well within the ordinary skill of the art at the time the claimed invention was made” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

#### **B. A prima facie case of obviousness of independent claim 1 has not been established**

Independent claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Wilford and Tajika. Appellant respectfully submits that a *prima facie* case of obviousness has not been established for at least the reasons set forth below.

Claim 1 recites a packet transmission system “comprising sorting means for sorting a packet according to whether the packet should be transmitted in a unicast form or in a

simultaneous packet form by multicast or broadcast; packet identification information addition means for adding packet identification information to the packet if the packet is sorted as a packet to be transmitted in the simultaneous packet form by the sorting means; and transmission means for transmitting said packet that is allocated said packet identification information a plurality of times even if the packet transmission system does not receive a retransmission request from a reception side, wherein said transmission means transmits said packet that is allocated said packet identification information and a redundant packet which is a duplicate of said packet that is allocated said packet identification information, and wherein said packet and said redundant packet transmitted with the same packet identification information contains an identical sequence number.”

The Final Office Action correctly recognizes that Graham does not explicitly recite “sorting a packet according to whether the packet should be transmitted in a unicast form or in a simultaneous packet form by multicast or broadcast,” in contrast to claim 1 (The Final Office Action, Page 3). However, the Action alleges that “it would be obvious to one of ordinary skill of art to modify Graham as indicated by Wilford and Tajika as providing sorting as in Wilford can improve transmission speed” (The Final Office Action, Page 4). The Advisory Action reasserts this ground of rejection by pointing out “Wilford specifically indicates that the invention design provides for low latency/high speed packet routing (Col. 2 lines 43-62)” (The Advisory Action, Page 2). Appellant respectfully disagrees.

Wilford Column 2 lines 43-62 reads:

“...This architecture provides low latency routing based on packet priority because packet routing and processing occurs at line rate (i.e., at wire speed) for most operations. ... the architecture provides a distributed routing function with minimal packet delay.” (Emphasis added.)

The packet prioritization on which the low latency routing of Wilford based is further explained in Column 10 lines 21-34, which reads:

“Outbound receiver 260 supports two channels of data from fabric interface 170, one for multicast packets and one for unicast packets. When outbound receiver 260 receives a packet from fabric interface 170, the packet is processed by multicast duplication module 510 which collects multicast and unicast packets into separate FIFOs...

At this point multicast packets are duplicated as required, turning them into unicast packets. Unicast and duplicated multicast packets are then sent to outbound rate limiter 270.”

In other words, Wilford is directed to minimize packet delay by sorting multicast and unicast packets into separate FIFOs and converting multicast packets that are sorted out to unicast packets. Thus, inherently, if the packets to be transmitted include only unicast packets and no multicast packet, such an advantage of “low latency routing based on packet priority” would not be achieved.

On the other hand, Graham is directed to tracking a client’s usage of services, in which “a client generates and sends one of more metering packets to a census service.” (Graham Abstract) Throughout Graham, the packets (metering packets) are generated by a client and transmitted to the census service (Graham Col. 2 lines 28-30). In other words, in Graham, only unicast packets (packets transmitted from a client to a census service) are to be transmitted. No multicast packet is to be transmitted.

Thus, in contrast to allegations set forth the Final Action alleges, the step of sorting unicast and multicast packets of Wilford, if added to the Graham method, would not improve the process speed of the Graham method and indeed would slow down the processing speed because the extra (not needed) sorting step would inherently take extra time and generate extra cost.

For at least the above reasons, Appellant respectfully submits that the general comment of “the invention design provides for low latency/high speed packet routing,” as

stated on Page 2 lines 6-8 of the Advisory Action, does not constitute a motivation for one of ordinary skill in the art to combine Wilform and Graham. Thus, Appellant respectfully submits that a *prima facie* case of obviousness has not been established for at least the above explained reasons.

Tajika was cited for disclosing other features of the claims, but fails to cure the above deficiencies.

Thus, Appellant respectfully submits that the rejection of claim 1 is improper and should be reverse for at least the above explained reasons.

**C. A *prima facie* case of obviousness of Independent claims 2-3 and 4-11 has not been established**

Claims 2-3 and 5-11 depend from claim 1, and are rejected as being unpatentable over the above combination or as being unpatentable over the combination of Graham, Wilford and Tajika in further view of one or more of Birdwell, Meizlik, Barkai, and Sharony. Appellant respectfully submits that a *prima facie* case of obviousness has not been established for at least the reasons set forth below.

As explained above, the combination of Graham, Wilford and Tajika does not render claim 1 obvious. Further, Birdwell, Meizlik, Barkai, and Sharony were cited for disclosing other features of the claims, but fail to cure the above deficiencies.

Thus, Appellant respectfully submits that the rejection of claims 2-3 and 5-11 is improper and should be reverse for at least the above explained reasons.

**(II) Rejection of Claim 12 under 35 U. S. C. § 102 (e)**

Claim 12 is rejected under 35 U.S.C. 102(e) as being unpatentable over Graham. Appellant respectfully submits that Daudelin fails to teach all elements recited in claim 12 for at least the reasons set forth below.

Claim 12 is directed to a packet transmission system comprising reception means for receiving duplicate packets that are allocated packet identification information once or a plurality of times without a retransmission request. For example, the Specification discloses that even when the packet has been previously received by the receiving side, the reception side may still be able to receive one or more duplicates of the packet, without sending a retransmission request. In other words, the claimed reception means is configured to receive duplicates of a packet without a retransmission request, regardless of whether the packet has been previously received by the reception side or not.

In sharp contrast to claim 12, Daudelin teaches an error-correcting communication protocol which requires “a retransmission request” to enable the retransmission process.

Specifically, C2/L48-64 of Daudelin reads:

“... if a receiver acknowledgment indicating successful reception has been received, the packet previously sent is removed from the head of its queue. Otherwise, the packet is left at the head of its queue, the queue is placed in a "pending retry" state, and a short, "pending retry" timer, preferably, a hardware timer, is started ...

When the pending retry timer expires, a hardware process or a software transmit complete interrupt service routine, moves all queues associated with the pending retry timer out of the pending retry state, enabling their packets to be transmitted again.”

In other words, a pending retry timer of Daudelin would only be started in absence of receiving a receiver acknowledgement from the reception side. When such a receiver acknowledgement is received, the pending retry timer would not be started. In such a case,

the packet having been previously sent would not be sent again to the receiver (the packet is removed from the head of its queue). Thus, Daudelin fails to teach “reception means for receiving duplicate packets that are allocated packet identification information once or a plurality of times without a retransmission request” as recited in claim 12.

In regard to this point, the Advisory Action states:

“The Examiner does not see how a ‘pending retry time expires’ equates to a retransmission request. Applicant’s specification indicates a retransmission request would be a request received from a reception side (see for example page 3 lines 1-11 [of the Specification]). The retry timer of Daudelin is simply a timer that allows for retransmission of packets after a certain time. There is no request involved (particularly a request received from a reception side) with the timer or the subsequent retransmission of a packet moved out of the pending retry state. (Page 3, lines 2-5 [of Daudelin])”

Appellant respectfully disagrees with the above statements.

First, the Examiner, pointing to Page 3 lines 1-11 of the Specification, erroneously construed the term “without a retransmission request” recited in claim 12 as “without a retransmission request from reception side.” The invention of claim 12, however, is not limited in this manner. Indeed, Page 3 lines 1-11 of the Specification refers to “a transmission means” as recited in claim 1, as opposed to “reception means” as recited in claim 12. Furthermore, the paragraph starting from Page 4 line 24 of the Specification states:

“According to a fourth aspect of the present invention, there is provided a packet reception system comprising: reception means capable of receiving same packets allocated packet identification information once or a plurality of times without a retransmission request ...” (emphasis added.)

The “retransmission request” as recited in claim 12 and the above embodiment does not limit the retransmission request to be a request from the reception side. Appellant

respectfully submits that it is the claims, instead of the certain exemplary embodiments of the Specification, that limit the scope of the invention.

Second, as explained above, Daudelin teaches “when the pending retry timer expires ... moves all queues associated with the pending retry timer out of the pending retry state, enabling their packets to be transmitted again.” On the other hand, if the pending retry timer does not expire (e.g. is not started), the packets would not be transmitted again. Thus, the expiration of the pending retry timer clearly constitutes a retransmission request, teaching away from the features recited in claim 12.

Thus, for at least above reasons, Daudelin fails to teach at least “reception means capable of receiving duplicate packets that are allocated packet identification information once or a plurality of times without a retransmission request,” as recited in claim 12.

Thus, Appellant respectfully submits that the rejection of claim 12 is improper and should be reverse for at least the above explained reasons.

**(III) Rejection of Claims 13-14 and 16-23 under 35 U. S. C. § 103 (a)**

Claims 13-14 and 16-23 under 35 U.S.C. 103(a) as being unpatentable over Daudelin in further view of one or more of Wilford, Birdwell, Chen, Barkai, Qaddoura and Sharony. Appellant respectfully submits that prior art fails to teach all elements recited in claims 13-14 and 16-23 for at least the reasons set forth below.

First, as explained above, Daudelin fails to teach at least “reception means capable of receiving duplicate packets that are allocated packet identification information once or a plurality of times without a retransmission request,” as recited in claim 12.

Second, Wilford, Birdwell, Chen, Barkai, Qaddoura, and Sharony were cited for disclosing other features of the claims, but fail to cure the above deficiencies of Daudelin.

Thus, Appellant respectfully submits that the rejection of claims 13-14 and 16-23 is improper and should be reverse for at least the above explained reasons.



**8. CONCLUSION**

For the foregoing reasons, it is submitted that the PTO's rejections are erroneous, and reversal of the applied rejections is respectfully requested.

*At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 C.F.R. § 1.25. Additionally, charge any fees to Deposit Account 08-2025 under 37 C.F.R. § 1.16 through § 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.*

Respectfully submitted,

Date July 16, 2009

By



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**9. CLAIMS APPENDIX**

1. (Previously Presented) A packet transmission system comprising:  
sorting means for sorting a packet according to whether the packet should be transmitted in a unicast form or in a simultaneous packet form by multicast or broadcast;  
packet identification information addition means for adding packet identification information to the packet if the packet is sorted as a packet to be transmitted in the simultaneous packet form by the sorting means; and  
transmission means for transmitting said packet that is allocated said packet identification information a plurality of times even if the packet transmission system does not receive a retransmission request from a reception side,  
wherein said transmission means transmits said packet that is allocated said packet identification information and a redundant packet which is a duplicate of said packet that is allocated said packet identification information, and  
wherein said packet and said redundant packet transmitted with the same packet identification information contains an identical sequence number.
2. (Previously Presented) The packet transmission system according to claim 1, further comprising:  
compression means for deleting a header of a third OSI (Open Systems Interconnection) layer and a header of a fourth OSI layer of the packet to be transmitted, and making data of a fifth OSI layer carried on a second OSI layer before adding the packet identification information to the packet to be transmitted.
3. (Original) The packet transmission system according to claim 1, wherein said packet is any one of a multicast packet and a broadcast packet.
4. (Cancelled)

5. (Original) The packet transmission system according to claim 1, wherein said packet identification information addition means adds one said packet identification information to each of a plurality of packets to be transmitted.

6. (Original) The packet transmission system according to claim 1, further comprising:

reception means for receiving information on a simultaneous packet loss frequency at the reception side per certain period, wherein

said transmission means changes a transmission parameter based on said information on the simultaneous packet loss frequency.

7. (Original) The packet transmission system according to claim 1, wherein said transmission means transmits said packet allocated said packet identification information, with a MAC (Media Access Control) address common to a plurality of reception devices set as a destination address.

8. (Original) The packet transmission system according to claim 7, further comprising:

means for retransmitting said packet if the packet transmission system does not receive an acknowledgement of transmission of said packet.

9. (Previously Presented) The packet transmission system according to claim 1, further comprising:

determination means for determining whether information equal in type to the packet identification information to be added by the packet identification information addition means is already added to said packet to be transmitted, wherein

if a determination result of said determination means is positive, said packet to be transmitted is transmitted while bypassing said packet identification information addition means.

10. (Original) A wireless LAN base station comprising the packet transmission system according to any one of claims 1 to 9.

11. (Original) A conference server comprising the packet transmission system according to any one of claims 1 to 8.

12. (Previously Presented) A packet reception system comprising:  
reception means for receiving duplicate packets that are allocated packet identification information once or a plurality of times without a retransmission request;

sorting means for sorting the received packets according to whether each of the received packets is a simultaneous packet or a unicast packet, and, if the received packet is a simultaneous packet, further sorting the received packet according to whether the simultaneous packet is allocated packet identification information;

determination means for determining, if the received packet is sorted as a simultaneous packet allocated packet identification information by the sorting means, whether the received packet is a duplicate of a simultaneous packet that is previously received by the reception means; and

discard means for discarding the received packet if a determination result of said determination means is positive,

wherein each of said duplicate packets includes a plurality of higher level packets.

13. (Previously Presented) The packet reception system according to claim 12, wherein

each of said packets received has a structure in which data of a fifth OSI (Open Systems Interconnection) layer is directly carried on a second OSI layer, and

the packet reception system further comprises restoration means for restoring a header of a third OSI layer and a header of a fourth OSI layer of each of said packets received.

14. (Original) The packet reception system according to claim 12, wherein each of said packets is any one of a multicast packet and a broadcast packet.

15. (Cancelled)

16. (Original) The packet reception system according to claim 12, further comprising:

counting means for counting a simultaneous packet loss frequency per certain period;

and

transmission means for transmitting information on said simultaneous packet loss frequency.

17. (Original) The packet reception system according to claim 12, further comprising:

holding means for holding a MAC address which is common to a plurality of reception devices, wherein

said reception means receives said packets having said MAC address as a destination MAC address.

18. (Original) The packet reception system according to claim 17, further comprising:

response means for transmitting an acknowledgment to a sender when said packets are received.

19. (Previously Presented) A packet transmission and reception system comprising:

the packet reception system according to claim 12;

detection means for detecting whether said reception means have received the duplicate packets at least once or have not received the duplicate packets at all; and

means for causing a plurality of higher level packets to be included in a packet to be transmitted based on a frequency with which said reception means have not received the duplicate packets at all.

20. (Previously Presented) A wireless LAN terminal comprising the packet reception system according to any one of claims 12 to 14 and 16 to 18.

21. (Previously Presented) A wired LAN terminal comprising the packet reception system according to any one of claims 12 to 14 and 16 to 18.

22. (Original) A wireless LAN terminal comprising the packet transmission and reception system according to claim 19.

23. (Original) A wired LAN terminal comprising the packet transmission reception system according to claim 19.

**10. EVIDENCE APPENDIX**

None.

**11. RELATED PROCEEDINGS APPENDIX**

None.